

Phaius takeoi (Orchidaceae) Newly Recorded from Thailand and Myanmar

H. KURZWEIL¹, S. WATTHANA² AND S. LWIN³

¹ Herbarium, Singapore Botanic Gardens, 1 Cluny Road, Singapore 259569

² Queen Sirikit Botanic Garden, The Botanical Garden Organization,
P.O. Box 7, Mae Rim, Chiang Mai 50180, Thailand

³ Myanmar Floriculturist Association, Alone Road, Yangon, Myanmar

Abstract

The occurrence of *Phaius takeoi* (Hayata) H.J. Su (Orchidaceae), previously only known in mainland China, Vietnam and Taiwan, is here reported for Thailand and Myanmar.

Introduction

In the course of floristic and taxonomic work on the orchids of Thailand and Myanmar three collections of a yellow and green-flowered *Phaius* species were made which did not match any currently known species (Seidenfaden, 1986; Kress *et al.*, 2003; Vaddhanaphuti, 2005; Kurzweil, 2010). The specimens are now positively identified as *P. takeoi* (Hayata) H.J. Su, currently only known in mainland China, Vietnam and Taiwan. The new record of this species in Thailand and Myanmar is reported below.

Phaius takeoi (Hayata) H.J. Su

Quart. J. Exp. Forest Natl. Taiwan Univ. 3 (1989) 77; Chen *et al.*, Fl. China vol. 25: 290 (2009); Su, in Digital Flora of Taiwan. http://www.efloras.org/florataxon.aspx/flora_id=100&taxon_id=242413999, accessed January 12, 2010). –Basionym: *Calanthe takeoi* Hayata, Icon. Pl. Formosan. 9 (1920) 111. –**Typus**: Taiwan, Toyencho, Urai, Oct 1917, *Takeo Ito* s.n. (not found). **Plate 1**. –*Phaius longicruris* Z.H. Tsi, Acta Phytotax. Sin. 19 (1981) 505; Averyanov and Averyanova, Turczaninowia 5 (2002) 93. –**Typus**: China, Yunnan, Jinghong, in forest, 1400 m alt., Oct 1936, *Wang 79184* (holotype, PE).

Terrestrial **herbs**, vegetative parts entirely glabrous, basally pseudobulbous, to 1 m tall. **Roots** to 3 mm in diameter. **Pseudobulbs** elongate-clavate, 20-40 cm long and (1.3-)2-2.5 cm in diameter, slightly tapering upwards, with 3-5 nodes, internodes 2.5-10.7 cm long, green or dark green with green veins, glabrous.

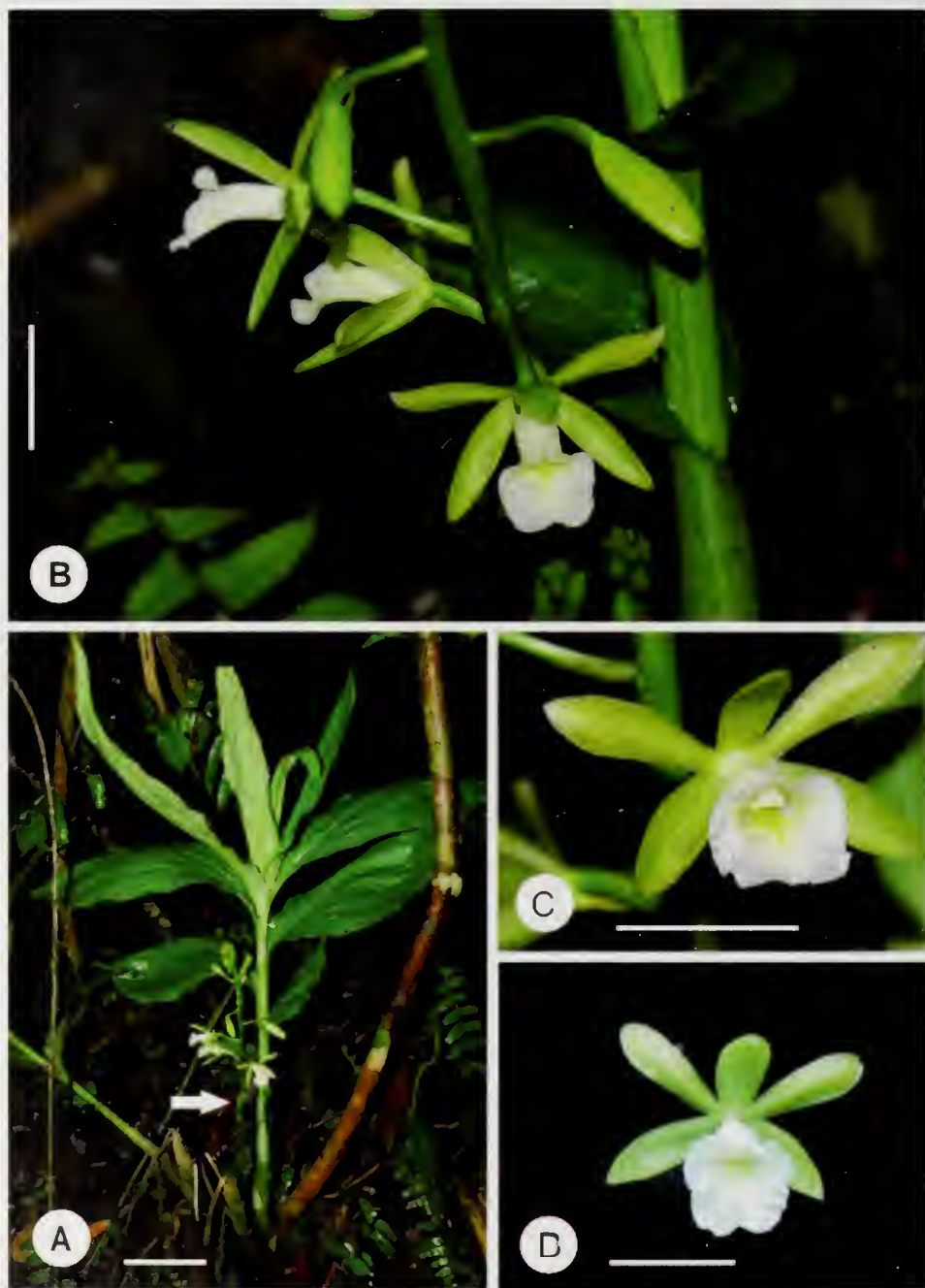


Plate 1. *Phaius takeoi* (Hayata) H.J. Su. A. Plant; B. Part of inflorescence; C & D. Flowers. All from Wathana 3287 (Thailand, Tak); D flower photo from Nyan Tun s.n. (Myanmar, Shan State). Bars: A. 10 cm. B-D. 3 cm.

covered by pale green sheaths. **Leaves** 5-8, arising from the apical portion of the pseudobulbs, elliptic, elliptic-lanceolate or elliptic-oblong, (5.5-)12-40 × (2.5-)5.5-10(-14) cm, acuminate or long-acuminate, margin entire and slightly undulate, with 5-7 veins, green above, pale green underneath. **Inflorescences** arising from the lower nodes of the pseudobulbs, erect, up to 60 cm long and 0.4-0.8 cm in diameter, normally racemose but once observed with a side branch (in the specimen *Watthana* 3287), glabrous below, glabrous or sparsely hairy on the uppermost part of the rachis. Peduncles 30-50 cm long, with up to 9 sterile bracts 16-28 mm long. Rachis 10-13 cm long (rachis in all three examined specimens still elongating), with 4-15 flowers. Floral bracts persistent, ovate-lanceolate or narrowly lanceolate, the lower ones to 17 × 3.8 mm, acute, glabrous. **Flowers** 4-5 cm in diameter, opening widely; sepals and petals pale green or yellowish green and sometimes darker at the apex, lip white or cream and sometimes yellow-tinged. Pedicel plus ovary 2-3.2 cm long, sparsely pubescent or nearly glabrous. Sepals subequal, elliptic-oblong, obtuse or acute, 27-32(-35) × (7-)8-10.5 mm, 5-7-veined, abaxially sparsely hairy; laterals slightly oblique, somewhat decurved. Petals oblanceolate or oblanceolate-oblong, sometimes basally indistinctly clawed, obtuse or acute, 28-33 × 6-8 mm, 3-veined. Lip nearly orbicular, 30-34 × 24-26 mm (excluding spur), shallowly 3-lobed, glabrous for the most part but basal portion and inside of spur hairy, basally united with the column for 7-8 mm; midlobe orbicular-square or suborbicular, apex emarginate and sinus sometimes mucronate, margins undulate; side lobes ovate or elongate-ovate, strongly incurved and forming a wide open tube to embrace the column, apex broadly rounded, margins undulate; disc with three faint yellow and smooth ridges, the median one extending from the base of the lip to just below the apex of the midlobe, the lateral ones arising from the middle part of the lip to the base of the midlobe, spur elongate-conical with broad entrance, clavate, 6-9 mm long, greenish yellow. Column stout, 15-25 mm long, 6-7 mm broad, white, hairy on the front face below the stigma and continually into the spur, apex widened with very prominent lateral appendages.

Specimens examined: THAILAND, **Northern Region**, Phitsanulok Province, Phu Soi Dao, Sep 2008, RMK 671/51 (QBG, QBG spirit); Northern Region, Tak Province, Umphang, Jul 2009, *Watthana* 3287 (QBG). MYANMAR, Shan State, Taunggyi, Jul to Aug 2009, *Nyan Tun* s.n. (SING).

Habitat and flowering time: This species is found in moist, broad-leaved primary or secondary forest. The Thai specimens were found in a marshy spot in evergreen forest, while the Myanmar specimen was collected in moist soil near streams. Populations were quite sizeable in the Myanmar plant where several dozen individuals were found on a hill slope, but very small

with under 20 individuals in the two Thai specimens'. Altitudes were not recorded in the Thai and Myanmar specimens reported here, but elsewhere the species is found at 500-1400 m (Averyanov and Averyanova, 2002; Tsi, 1981; Chen *et al.*, 2009; Su, no date, Digital Flora of Taiwan). Flowering occurs between July and September, and has elsewhere been reported between October and December. In Taiwan and Vietnam the species is said to be uncommon (Averyanov and Averyanova, 2002; Su, no date, Digital Flora of Taiwan).

Distribution: China (Yunnan), Taiwan, Vietnam, Thailand, Myanmar.

Notes: Among the Thai and Myanmar *Phaius* congeners, this species is unmistakable with its habit and the yellow-green flowers.

Acknowledgements

We would like to acknowledge the Queen Sirikit Botanic Garden for assistance during fieldwork and the Rom Klao Botanical Garden for providing one of the specimens examined. We would also like to thank the collector of the Myanmar specimen, Mr. Nyan Tun, for providing information, and the Myanmar Forest Department for issuing a CITES permit to transport the plant to Singapore for identification. Dr. Jin Xiaohua is thanked for information on the type specimen of *Phaius longicruris*.

References

- Averyanov, L. and A. Averyanova. 2002. Rare species of orchids (Orchidaceae) in the flora of Vietnam. *Turczaninowia* **5**: 49-108.
- Chen S-C, Liu Z-J, Zhu G-H, Lang K-Y, Tsi Z-H, Luo Y-B, Jin X-H, P.J. Cribb, J.J. Wood, S.W. Gale, P. Ormerod, J.J. Vermeulen, H.P. Wood, D. Clayton and A. Bell. 2009. Orchidaceae. In: Wu, Z-Y., P.H. Raven and Hong, D.-Y. (eds.), *Flora of China*, vol. 25, pp. 1-566. Science Press, Beijing, and Missouri Botanical Garden Press, St. Louis.
- Kress, W.J., R. DeFilipps, E. Farr and Yin-Yin-Kyi. 2003. A checklist of the trees, shrubs, herbs and climbers of Myanmar. *Contributions from the US National Herbarium* **45**: 1-590.
- Kurzweil, H. 2010. A precursory study of the *Calanthe* group (Orchidaceae) in Thailand. *Adansonia*, sér. 3, **32**: 57-107

- Su, H-J. Not dated. *Phaius*. In: Digital Flora of Taiwan. Published on the internet at http://www.efloras.org/florataxon.aspx?flora_id=100&taxon_id=242413999, accessed January 12, 2010.
- Seidenfaden, G. 1986. Orchid genera in Thailand XIII. Thirty-three epidendroid genera. *Opera Botanica* 89: 1-216.
- Tsi, Z-H. 1981. New species of Orchidaceae from China. *Acta Phytotaxonomica Sinica* 19: 505-510.
- Vaddhanaphuti, N. 2005. *A field guide to the wild orchids of Thailand*, ed. 4. Silkworm Books, Chiang Mai.

